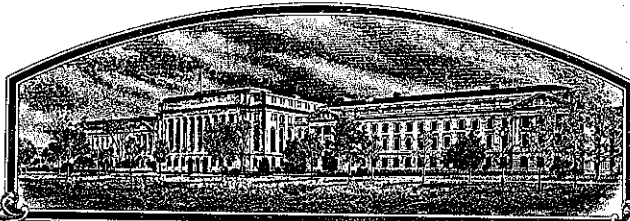


No.

9500155



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

**Delta and Pine Land Company**

Whereas, THERE HAS BEEN PRESENTED TO THE

**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW:

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'DP 3571<sup>81</sup>'

*In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this thirtieth day of May in the year of our Lord one thousand nine hundred and ninety-seven.*

Attest:

*Marsha A. Stan*  
Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

*Jan F. Hiltman*  
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE DIVISION

## APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(INSTRUCTIONS ON REVERSE)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) <b>DELTA AND PINE LAND COMPANY</b>		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO. <b>DPX 3571</b>		3. VARIETY NAME <b>DP 3571-878</b> <i>9/12 23 May 1995</i>	
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) <b>100 Main Street Scott, MS 38772</b>		5. PHONE (include area code) <b>(601) 742-3351</b>		FOR OFFICIAL USE ONLY PVPO NUMBER <b>9500155</b>	
6. GENUS AND SPECIES NAME <b>Glycine max</b>		7. FAMILY NAME (Botanical) <b>Leguminosae</b>		Filing and Examination Fee: \$ <b>2450.00</b> Date <b>MAY 2, 1995</b>	
8. CROP KIND NAME (Common Name) <b>Soybean</b>		9. DATE OF DETERMINATION <b>1992</b>		Certificate Fee: \$ <b>300.00</b> Date <b>05/21/97</b>	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) <b>Corporation</b>				Filing and Examination Fee: \$ <b>2450.00</b> Date <b>MAY 2, 1995</b>	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION <b>Delaware</b>		12. DATE OF INCORPORATION		Certificate Fee: \$ <b>300.00</b> Date <b>05/21/97</b>	

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

Dr. Harry Collins

P.O. Box 157

Scott, MS 38772

PHONE (include area code):

(601) 742-3351

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)

- a. ☒ Exhibit A, Origin and Breeding History of the Variety  
b. ☒ Exhibit B, Novelty Statement  
c. ☒ Exhibit C, Objective Description of Variety  
d. ☒ Exhibit D, Additional Description of Variety  
e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership  
f. ☒ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office \_\_\_\_\_  
g. ☒ Filing and Examination Fee (\$2,325) made payable to "Treasurer of the United States"

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act) ☐ YES (If "YES," answer items 16 and 17 below) ☒ NO (If "NO," skip to item 18 below)

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?

☐ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?

☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?

☐ YES (If "YES," through ☐ Plant Variety Protection Act ☐ Patent Act. Give date: \_\_\_\_\_)  
☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES?

☐ YES (If "YES," GIVE NAMES OF COUNTRIES AND DATES) \_\_\_\_\_  
☒ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT [Owner(s)]

CAPACITY OR TITLE

DATE

MIDSOUTH SOYBEAN BREEDER

4/12/95

SIGNATURE OF APPLICANT [Owner(s)]

CAPACITY OR TITLE

DATE

VICE PRESIDENT  
DIRECTOR OF RESEARCH

4-26-95

**EXHIBIT A****DELTA AND PINE LAND COMPANY'S APPLICATION FOR DP 3571 STS****ORIGIN AND BREEDING HISTORY**

- Summer 1988 - W20 X DP 415 cross was made
- Winter 1988-89 - F<sub>1</sub> advanced to F<sub>2</sub> in winter nursery
- Summer 1989 - A5403 crossed to random sulfonylurea resistant F<sub>2</sub> plants from W20 x DP 415
- Winter 1989-90 - DP 415 crossed with F<sub>2</sub> of A5403//W20/Hutcheson as cross #90-378
- Summer 1990 - F<sub>1</sub> of 90378 advanced to F<sub>2</sub> in winter nursery.
- Winter 1990-91 - Sulfonylurea tolerant F<sub>2</sub> advanced to F<sub>3</sub> in Costa Rica by bulk pod method. F<sub>2</sub> plants sprayed with sulfonylurea herbicide to eliminate susceptible plants.
- Summer 1991 - Sulfonylurea tolerant F<sub>3</sub> advanced to F<sub>4</sub> in Costa Rica. F<sub>3</sub> plants sprayed with sulfonylurea herbicides to eliminate susceptibles.
- Winter 1991-92 - Tolerant F<sub>4</sub> plants harvested individually after spraying with sulfonylurea herbicide to eliminate non-tolerant plants.
- Summer 1992 - F<sub>5</sub> planted in 3 replicate hill plot test. Line 90378-21 was identified and determined to be stable for characteristics as described in Exhibit C of this application. At this time, no variants were known or were observed.
- 1993 - Line 90378-21 was tested as Key #4271 in a 2 replicate yield test at 2 locations. Seed increase was eliminated.
- 1994 - Tested as Key #5020 in advanced yield tests at 15 southern U.S. locations. Seed was increased and any offtypes if any were removed.
- 1995 - Tested in state experiment station trials and D&PL tests as DPX 3571. Seed increased further and released as DP 3571 STS.

**EXHIBIT B****DELTA AND PINE LAND COMPANY'S APPLICATION FOR DP 3571 STS****NOVELTY STATEMENT**

To our knowledge, DP 3571 STS most nearly resembles DP 105, P9592, and A5545. Differences include, but are not necessarily restricted to the following:

- 1) DP 3571 STS differs from DP 105 and P9592 in that DP 3571 STS is tolerant to sulfonyleurea herbicide at high rates whereas DP 105 and P9592 are sensitive.
- 2) DP 3571 STS is resistant to races 3 and 14 soybean cyst nematodes whereas A5545 has only race 3 resistance.
- 3) DP 3571 STS is resistant to soybean mosaic virus whereas A5545 is susceptible.

OBJECTIVE DESCRIPTION OF VARIETY  
SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) DELTA AND PINE LAND COMPANY	TEMPORARY DESIGNATION DPX 3571	VARIETY NAME DP 3571 STS
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 100 Main Street Scott, MS 38772		FOR OFFICIAL USE ONLY PVPO NUMBER 9500155

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g.,  ). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

★ 1. SEED SHAPE:



1 - Spherical (L/W, L/T, and T/W ratios = < 1.2)  
3 - Elongate (L/T ratio > 1.2; T/W = < 1.2)

2 - Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)  
4 - Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ 2. SEED COAT COLOR: (Mature Seed)

1 - Yellow    2 - Green    3 - Brown    4 - Black    5 - Other (Specify) \_\_\_\_\_

★ 3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 - Dull ('Corsoy 79'; 'Braxton')    2 - Shiny ('Nebroy'; 'Gazoy 17')

★ 4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

★ 5. HILUM COLOR: (Mature Seed)

1 - Buff    2 - Yellow    3 - Brown    4 - Gray    5 - Imperfect Black    6 - Black    7 - Other (Specify) \_\_\_\_\_

★ 6. COTYLEDON COLOR: (Mature Seed)

1 - Yellow    2 - Green

★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 - Low    2 - High

★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

1 - Type A (SP1<sup>a</sup>)    2 - Type B (SP1<sup>b</sup>)

★ 9. HYPOCOTYL COLOR:

1 - Green only ('Evans'; 'Davis')    2 - Green with bronze band below cotyledons ('Woodworth'; 'Tracy')  
3 - Light Purple below cotyledons ('Beeson'; 'Pickett 71')  
4 - Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ 10. LEAFLET SHAPE:

1 - Lanceolate    2 - Oval    3 - Ovate    4 - Other (Specify) Ovate to Lanceolate

11. LEAFLET SIZE:

- ☒ 2 1 - Small ('Amsoy 71'; 'AS312') 2 - Medium ('Corsoy 79'; 'Gasoy 17')  
3 - Large ('Crawford'; 'Tracy')

12. LEAF COLOR:

- ☒ 3 1 - Light Green ('Weber'; 'York') 2 - Medium Green ('Corsoy 79'; 'Braxton')  
3 - Dark Green ('Gnome'; 'Tracy')

★ 13. FLOWER COLOR:

- ☒ 2 1 - Blue 2 - Purple 3 - White with purple throat  
RECEIVED  
USDA-AMS-PVPO

★ 14. POD COLOR:

- ☒ 2 1 - Green 2 - Brown 3 - Black  
MAY -2 A11:16

★ 15. PLANT PUBESCENCE COLOR:

- ☒ 1 1 - Gray 2 - Brown (Tawny)

16. PLANT TYPES:

- ☒ 2 1 - Slender ('Essex'; 'Amsoy 71') 2 - Intermediate ('Amcor'; 'Braxton')  
3 - Bushy ('Gnome'; 'Govan')

★ 17. PLANT HABIT:

- ☒ 1 1 - Determinate ('Gnome'; 'Braxton') 2 - Semi-Determinate ('Will')  
3 - Indeterminate ('Nebsoy'; 'Improved Pelican')

★ 18. MATURITY GROUP:

- ☒ 0 ☒ 8 1 - 000 2 - 00 3 - 0 4 - I 5 - II 6 - III 7 - IV 8 - V  
9 - VI 10 - VII 11 - VIII 12 - IX 13 - X

★ 19. DISEASE REACTION: (Enter 0 - Not Tested; 1 - Susceptible; 2 - Resistant)

BACTERIAL DISEASES:

- ★ ☒ 2 Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)  
★ ☐ 0 Bacterial Blight (*Pseudomonas glycinea*)  
★ ☐ 0 Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

- ★ ☐ 0 Brown Spot (*Septoria glycines*)  
Frogeye Leaf Spot (*Cercospora sojae*)  
★ ☐ Race 1 ☐ Race 2 ☐ Race 3 ☐ Race 4 ☐ Race 5 ☒ 1 Other (Specify) Races Unknown  
☐ 0 Target Spot (*Corynespora cassiicola*)  
☐ 0 Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)  
☐ 0 Powdery Mildew (*Microspheera diffusa*)  
★ ☐ 0 Brown Stem Rot (*Cephalosporium gregatum*)  
☒ 2 Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

## 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

## FUNGAL DISEASES: (Continued)

- ★ ☐ 0 Pod and Stem Blight (*Diaporthe phaseolorum* var. *sojae*)
- ☐ 0 Purple Seed Stain (*Cercospora kikuchii*)
- ☐ 0 Rhizoctonia Root Rot (*Rhizoctonia solani*)
- Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)
- ★ ☐ 1 Race 1 ☐ Race 2 ☐ Race 3 ☐ Race 4 ☐ Race 5 ☐ Race 6 ☐ Race 7
- ☐ Race 8 ☐ Race 9 ☐ Other (Specify) \_\_\_\_\_

## VIRAL DISEASES:

- ☐ 0 Bud Blight (Tobacco Ringspot Virus)
- ☐ 0 Yellow Mosaic (Bean Yellow Mosaic Virus)
- ★ ☐ 0 Cowpea Mosaic (Cowpea Chlorotic Virus)
- ☐ 0 Pod Mottle (Bean Pod Mottle Virus)
- ★ ☐ 2 Seed Mottle (Soybean Mosaic Virus)

## NEMATODE DISEASES:

- Soybean Cyst Nematode (*Heterodera glycines*)
- ★ ☐ 0 Race 1 ☐ 0 Race 2 ☐ 2 Race 3 ☐ Race 4 ☐ 2 Other (Specify) Race 14
- ☐ 0 Lance Nematode (*Hoplolaimus Colonus*)
- ★ ☐ 1 Southern Root Knot Nematode (*Meloidogyne incognita*)
- ★ ☐ 0 Northern Root Knot Nematode (*Meloidogyne Hapla*)
- ☐ 1 Peanut Root Knot Nematode (*Meloidogyne arenaria*)
- ☐ 0 Reniform Nematode (*Rotylenchulus reniformis*)
- ☐ OTHER DISEASE NOT ON FORM (Specify): \_\_\_\_\_

## 20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ★ ☐ 0 Iron Chlorosis on Calcareous Soil
- ☐ 2 Other (Specify) Resistant to sulfonylurea herbicides

## 21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ☐ 0 Mexican Bean Beetle (*Epilachna varivestis*)
- ☐ 2 Potato Leaf Hopper (*Empoasca fabae*)
- ☐ Other (Specify) \_\_\_\_\_

## 22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	P9592	Seed Coat Luster	DP 105
Leaf Shape	DP 415	Seed Size	DP 105
Leaf Color	DP415	Seed Shape	DP 415
Leaf Size	DP 415	Seedling Pigmentation	DP 105

## 21. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/POD
				CM Width	CM Length	% Protein	% Oil		
DP 3571 STS Submitted	131	1.8	91			36.4	18.7	14	
P9592 Name of Similar Variety	133	2.6	91			35.9	19.0	17	

## PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.

2. Buttery, B.R., and R.J. Butzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.

3. Hymowitz, T. 1973. Electrophoretic analysis of SBT1-A<sub>2</sub> in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.

4. Payne, R.C. and L.E. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

95 MAY -2 A11:16



**EXHIBIT D****DELTA AND PINE LAND COMPANY'S APPLICATION FOR DP 3571 STS****ADDITIONAL DESCRIPTION OF VARIETY**

DP 3571 STS is an  $F_3$  selection composited in the  $F_4$  generation from the cross A5979\\A5403\\W20\\DP 415. It is tolerant to sulfonylurea herbicides, has excellent yield potential and broad adaptation.

DP 3571 STS is late group V maturing 5 days later than DP 415 and 2 days earlier than DP 3588. It has purple flowers, gray pubescence, dark green foliage, and tan pods at maturity. Seeds are dull yellow with imperfect black hila and average 3200 seed per pound.

DP 3571 STS is resistant to soybean cyst nematode races 3 and 14, stem canker, and soybean mosaic virus. It is tolerant to phytophthora root rot and sulfonylurea herbicides. It is susceptible to frogeye leaf spot.

8

---

**SOYBEAN PRODUCT NOMINATION FORM**

Suggested Nominee Number: DPX 3571

Experimental Designations: 90-378-21 (5020)

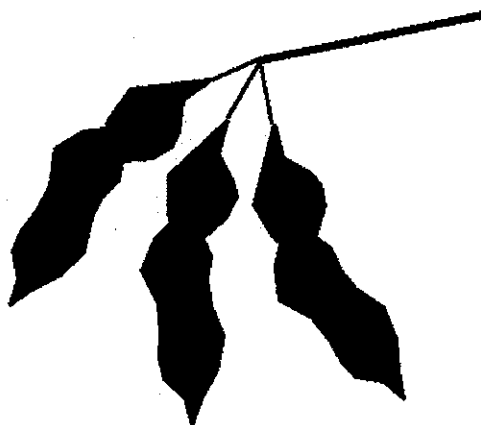
Submitted by: Grover Shannon, Harry Collins, and Tom Wofford

Date Submitted: January 1, 1994

Parentage: A5979\\A5403\\W20\DP 415

100-3038  
100-3020

100-3038  
100-3020



Data Collected from 15 Replicated Yield Tests.

**I. Plant & Seed Characteristics:**

Flower Color: Purple

Pubescence Color: Grey

Hilum Color: Imperfect Black

Pod Wall Color: Tan

Seed Coat Luster: Dull

Leaf Shape: Ovate to Lanceolate

Plant Type: Semi-determinate

Peroxidase Activity:



## Variety Description

## DPX 3571

DPX 3571 is an F3 selection composited in the F<sub>4</sub> generation from the cross A5979\\A5403\\W20\DP 415. It is tolerant to sulfonylurea herbicides, has excellent yield potential, and broad adaptation.

DPX 3571 is late group V maturing 5 days later than DP 415 and 2 days earlier than DP 3588. It has purple flowers, grey pubescence and tan pods. Seeds are dull yellow with imperfect black hila and average 3200 seed per pound.

DPX 3571 is resistant to soybean cyst nematode race 3 and 14, stem canker and soybean mosaic virus. It is tolerant to phytophthora root rot and sulfonylurea herbicides. It is susceptible to frogeye leaf spot.

## KEY FEATURES

- Late group V maturity
- Tolerant to sulfonylurea herbicides
- Allows greater flexibility to manage problem weeds
- Excellent yield potential
- Resistant to races 3 and 14 of soybean cyst nematode
- Stem canker resistant
- Soybean mosaic virus resistant
- Susceptible to frogeye leaf spot

## CHARACTERISTICS

Maturity	Late group V
Flower Color	Purple
Pubescence Color	Grey
Hilum Color	Imperfect Black
Plant Height	Medium-Tall
Lodging Resistance	Excellent
Shatter Resistance	Excellent
Seed Size	Medium-Large
Stem Canker	Resistant
Phytophthora Root Rot	Field Tolerant
Cyst Nematode	Resistant to Race 3 and 14
Common Root Knot Nematode	Moderately Susceptible
Lance Nematode	Unknown
Red Crown Rot	Unknown
Aerial Blight	Unknown
Frogeye Leaf Spot	Moderately Susceptible
Sudden Death Syndrome	Unknown
High Chloride	Sensitive
Soybean Mosaic Virus	Resistant

## II. Agronomic Characteristics

Line	Mat.	Plant Height	Ldg.	Shat.	Seeds/Lb.	% Pro.	% oil
DPX 3571	-3	36	1.8	Exc.	3250	36.4	18.7
DP 3588	0	39	2.9	Exc.	2950	35.6	18.2
P9592	0	36	2.6	Exc.	2800	35.9	19.0
Hutcheson	-3	26	1.5	Exc.	3000	35.2	19.4

## III. Yield Data:

## 1994 Yield &amp; Agronomic Data Summary

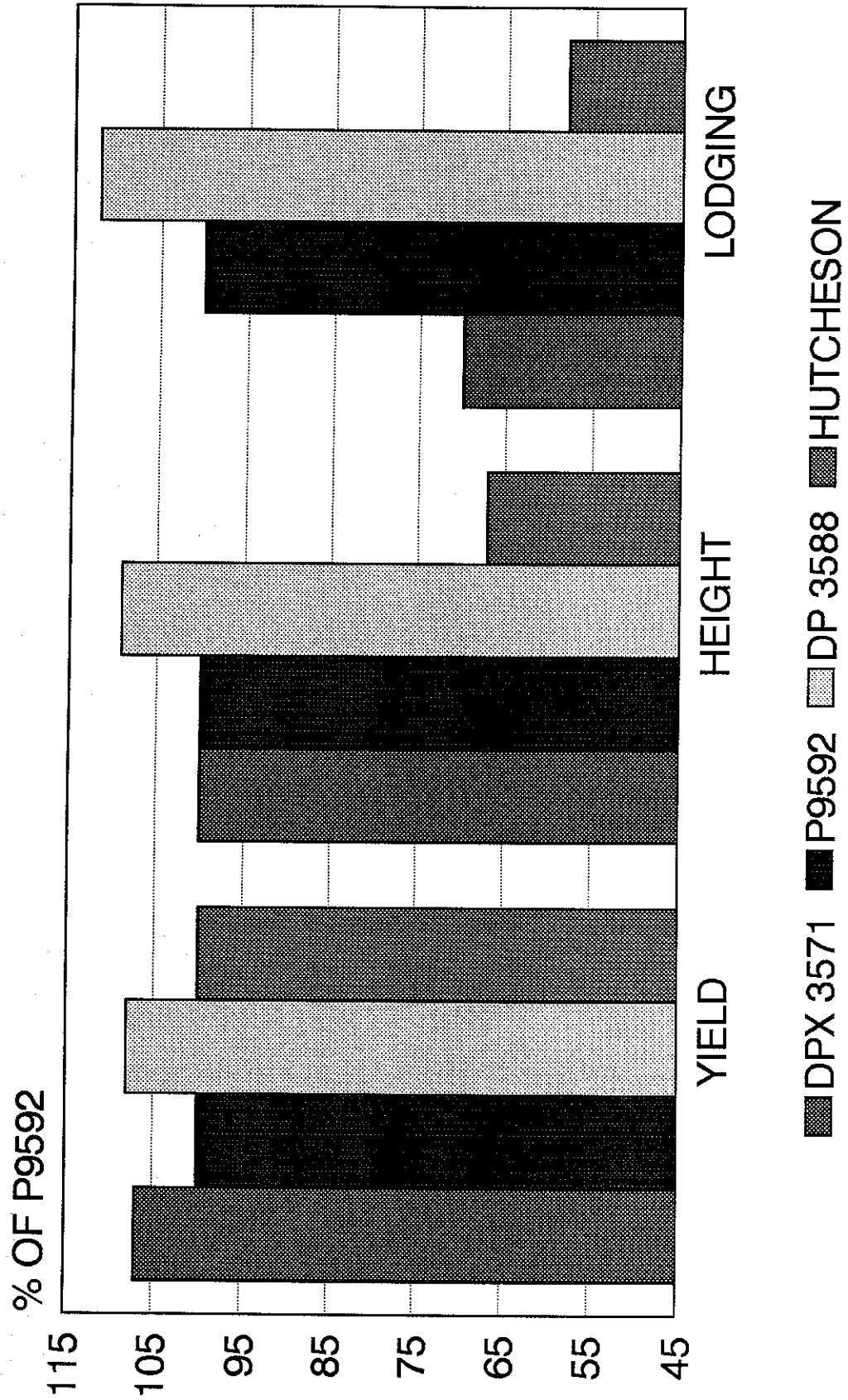
Line	Yield	% Yield	Mat.	Hgt.	Ldg.
DP 3588	55.0	108	0	39	2.9
DPX 3571	54.5	107	-3	36	1.8
DPX 3561	53.7	105	-4	36	2.4
DPX 3570	51.5	101	-2	31	2.5
P9592	51.1	100	0	36	2.6
Hutcheson	51.1	100	-3	26	1.5
S59-60	49.1	96	0	29	2.2
# Tests	15	15	5	10	7

## 1993 Yield &amp; Agronomic Data Summary - 451P311, 451P316

Line	Yield	% Yield	Mat.
DPX 3571	65.1	125	+4
P9501	52.4	100	-1
DP 415	52.0	100	0
RA 452	46.1	89	-2
A5560	40.8	79	-4
# Tests	2	2	2

# DPX 3571

## 1994 YIELD & AGRONOMIC SUMMARY



9500155

## Yield Summary in Bu/A

By Region: 1994

LINE	MIDSOUTH		SOUTHEAST		OVERALL MEAN	
	YLD	% YLD	YLD	% YLD	YLD	% YLD
DP 3588	56.5	108	52.1	106	55.0	108
DPX 3571	58.9	113	45.5	93	54.5	107
P9592	52.2	100	49.0	100	51.1	100
Hutcheson	50.1	96	53.8	110	51.1	100
S59-60	51.7	99	43.9	90	49.1	96
# TESTS	10	10	5	5	15	15

By States: 1994

LINE	TN	AR	MS	LA	NC	SC	VA	AL	MEAN
DP 3588	56.3	56.0	53.1	60.7	56.6	36.3	45.9	56.9	55.0
DPX 3571	58.1	55.9	58.3	66.3	44.5	34.0	47.2	49.7	54.5
P9592	59.0	52.5	41.2	56.2	53.8	28.7	49.8	52.1	51.1
Hutcheson	58.8	50.1	35.6	55.9	57.0	33.8	52.4	57.8	51.1
S59-60	57.2	61.3	37.8	41.4	47.7	27.5	52.1	38.2	49.1
# TESTS	2	4	2	2	2	1	1	1	15

YIELD IN BU/A  
BY TESTS AND LOCATIONS

1994 - 455M

Line	M I D S O U T H										Mid-Sth Mean
	TN RP	TN UC	AR CD	AR BR	AR DM	AR WB	MS SL	MS SC	LA TL	LA MG	
DPX 3588	47.8	64.8	60.5	51.5	51.5	60.5	54.3	51.9	59.3	62.0	56.5
DPX 3571	47.7	68.4	58.7	47.6	58.9	58.2	64.9	51.7	55.7	76.8	58.9
DPX 3561	48.0	63.9	65.6	49.7	49.4	63.1	57.1	51.9	56.9	55.0	56.1
DPX 3570	54.4	67.2	63.7	54.3	52.0	66.0	37.9	45.2	56.8	32.2	53.8
P9592	45.5	72.4	61.8	51.9	46.1	50.1	42.9	39.5	59.7	52.7	52.2
Hutcheson	53.9	63.6	67.9	53.4	37.8	41.1	38.5	32.7	64.8	46.9	50.1
S59-60	60.7	53.6	67.3	64.5	51.2	62.1	34.6	41.0	56.1	26.6	51.7
# REPS	3	3	3	3	3	3	3	3	3	3	
C.V.	8.6	11.4	10.3	12.6	8.6	22.5	14.7	10.0	4.9	14.4	
LSD .05	7.6	11.3	10.1	7.8	6.8	15.1	10.5	6.3	4.7	12.1	

Line	S O U T H E A S T					Sth-East Mean	Over All Mean
	VA HL	NC CL	NC SF	SC OR	AL DC		
DPX 3588	45.9	53.9	59.0	36.3	56.9	52.1	55.0
DPX 3571	47.2	33.6	55.4	34.0	49.7	45.5	54.5
DPX 3561	45.9	53.9	55.1	30.6	52.1	48.9	53.7
DPX 3570	52.2	54.4	57.3	30.9	40.3	48.5	51.5
P9592	49.8	87.8	49.8	28.7	51.1	49.0	51.1
Hutcheson	52.4	59.2	54.7	33.8	57.8	53.8	51.1
S59-60	52.1	43.6	51.7	27.5	38.2	43.9	49.1
# Reps	3	3	3	3	3		
C.V.	6.9	10.1	13.3	11.2	10.9		
LSD .05	5.3	7.8	13.5	5.6	8.2		

## By Soil Type Planting and Disease Situation:1994

Line	Loam	Clay	Early Planted	SCN	Stem Canker	Root Knot	SU HERB	Aerial Blight
DPX 3571	53.7	55.4		46.3	76.8		64.5	
DP 3588	54.9	57.2		52.7	62.0		56.1	
P9592	53.9	53.7		52.0	52.7		45.0	
Hutcheson	56.5	55.1		48.5	46.9		39.4	
S59-60	51.3	54.8		47.4	26.6		34.0	
# TESTS	5	3		2	1		3	

## 1994 Head to Head Comparisons

DPX 3571 vs	Total Comp.	Won by-Bu/A	# Wins	% Wins
DP 3588	15	-0.4	5	33
P9592	15	3.4	8	53
Hutcheson	15	3.4	7	47
S59-60	15	5.3	7	47



## IV. DISEASE REACTION AND OTHER INFORMATION:

Cyst Nematode

DPX 3571 is resistant to race 3 and moderately resistant to race 14 of soybean cyst nematode.

		Race 3									
		1994					1994				
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
DPX 3571		7	0	0	0	0	2	2	0	0	0
Centennial		7	0	0	0	0	9	1	0	0	0
Hutcheson		0	0	0	0	7	0	2	2	4	0
Location:	Jackson, TN						Scott, MS				
Conducted by:	Dr. Lawrence Young USDA, Nematologist						Grover Shannon Grady Robinson				

		Race 14									
		1994					1994				
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
DPX 3571		0	2	3	0	0	0	2	2	0	0
Centennial		0	0	0	0	5	0	0	0	0	4
Bedford		4	3	0	0	0	0	0	0	5	0

Location:	Jackson, TN	Scott, MS
Conducted by:	Dr. Lawrence Young USDA, Nematologist	Grover Shannon Grady Robinson

Root Knot Nematode 1 = No galling 5 = Very severe galling

DPX 3571 is moderately susceptible to root knot nematode.

		Common Root Knot <u>M. Incognita</u> 1994		Peanut Root Knot <u>M. arenaria</u> 1994	
DPX 3571		2.0		3.5	
Susceptible Ck.		3.5		3.5	
Resistant Ck.		1.0		2.0	
Location:	Jay, FL			Jay, FL	
Conducted by:	Dr. Robert Kinloch Nematologist University of Florida			Dr. Robert Kinloch Nematologist University of Florida	

Stem Canker 1 = No symptoms 5 = Very severe symptoms  
 DPX 3571 is very resistant to Stem Canker.

	<u>1994</u>	<u>1994</u>
DPX 3571	1.0	1.0
DP 3588	1.0	1.0
P9592	2.7	2.0
S59-60	4.0	3.0
DP 3570	3.3	3.0
DP 415	1.0	1.0

Location: Dumas, AR Morganza, LA  
 Conducted by: Grover Shannon Grover Shannon  
 and Grady Robinson

Frogeye Leaf Spot 1 = None 5 = Very Severe  
 DPX 3571 is probably susceptible to frogeye leaf spot based on some observations

Sudden Death Syndrome 1 = None 5 = Very Severe  
 DPX 3571 reaction to SDS is unknown.

Soybean Mosaic Virus 1 = None 5 = Very Severe  
 DPX 3571 is resistant to soybean mosaic virus

	<u>1994</u>
DPX 3571	1.7
DP 415	1.3
Hutcheson	1.7
S59-60	3.4
DP 3588	1.3

Location: Scott, MS  
 Conducted by: Grover Shannon

Aerial Blight 1 = None 5 = Very Severe  
 DPX 3571 reaction to aerial blight is unknown.

Herbicide Tolerance  
 DPX 3571 has no known sensitivity to common soybean herbicides when used as directed. It has normal tolerance to Metribuzin and high tolerance to sulfonylurea herbicides.

Chloride Tolerance  
 DPX 3571 is sensitive to high chloride.

Seed Stock  
 There are 875 bushels of foundation DPX 3571 and 2 units of pure breeder seed.

**EXHIBIT E****DELTA AND PINE LAND COMPANY'S APPLICATION FOR DP 3571 STS****STATEMENT OF APPLICANT'S OWNERSHIP**

DP 3571 STS was developed by Delta and Pine Land Company Plant Breeders. Selection and testing of DP 3571 STS was performed solely by Delta and Pine Land Company. By agreement between employee and Delta and Pine Land Company, all rights to any invention, discovery, or development made by an employee are assigned to the company. No rights to such an invention are retained by the employee.

---